

# **Ecological Effects of Sea Level Rise**

## **Fiscal Year 2016 Federal Funding Opportunity**



**David M. Kidwell**

**National Oceanic and Atmospheric Administration**

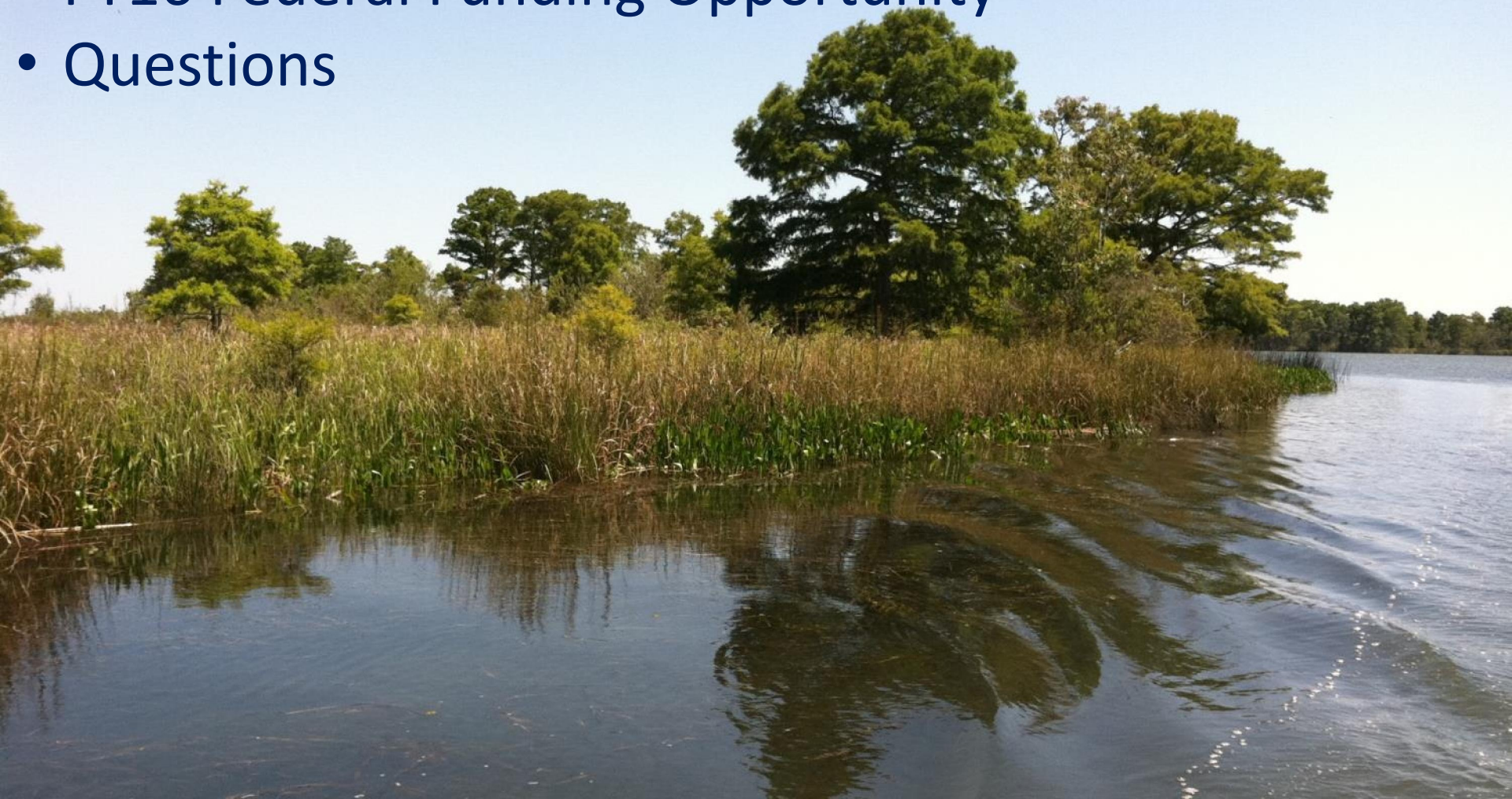
**National Centers for Coastal Ocean Science**





# Outline

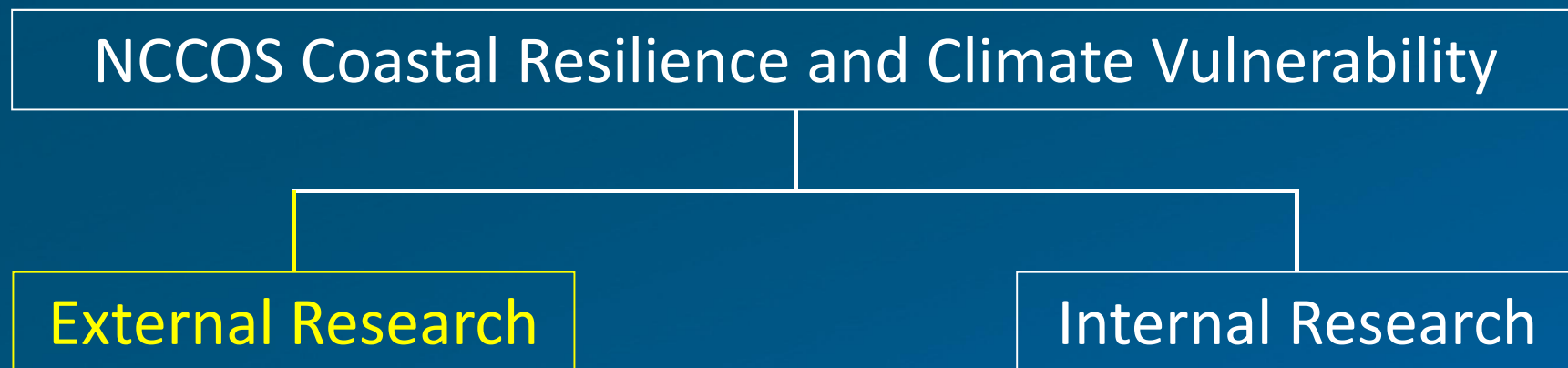
- Program Introduction
- FY16 Federal Funding Opportunity
- Questions



# EESLR Program Introduction

## Ecological Effects of Sea Level Rise (EESLR)

- Component of integrated NCCOS research portfolio;
- Primary external funding program under the NCCOS Coastal Resilience and Climate Vulnerability Initiative



# EESLR Program Introduction

## EESLR Program Goal

- Facilitate informed adaptation planning and coastal management decisions through multidisciplinary research that results in integrated models and tools of dynamic physical and biological processes capable of evaluating vulnerability and resilience under multiple SLR, inundation, and coastal management scenarios.

## EESLR Approach

- Collaborative science/management approach;
- User-driven and outcome oriented;
- Sound science to inform decision making

# EESLR Program Introduction

## EESLR History

- Initiated in 2006 in North Carolina
  - Suite of projects focused tools to assess ecological impacts and shorelines
- 2010 project in the northern Gulf of Mexico
  - Developed tools to assess impacts on storm surge, oysters, and marshes
- Initiated 4 new projects in 2015
  - Focused on needs of NOAA Sentinel Site Cooperatives
  - <http://coastalscience.noaa.gov/news/climate/nccos-sponsors-20-new-research-projects/>



# Current and Projected EESLR



# FY16 Federal Funding Opportunity

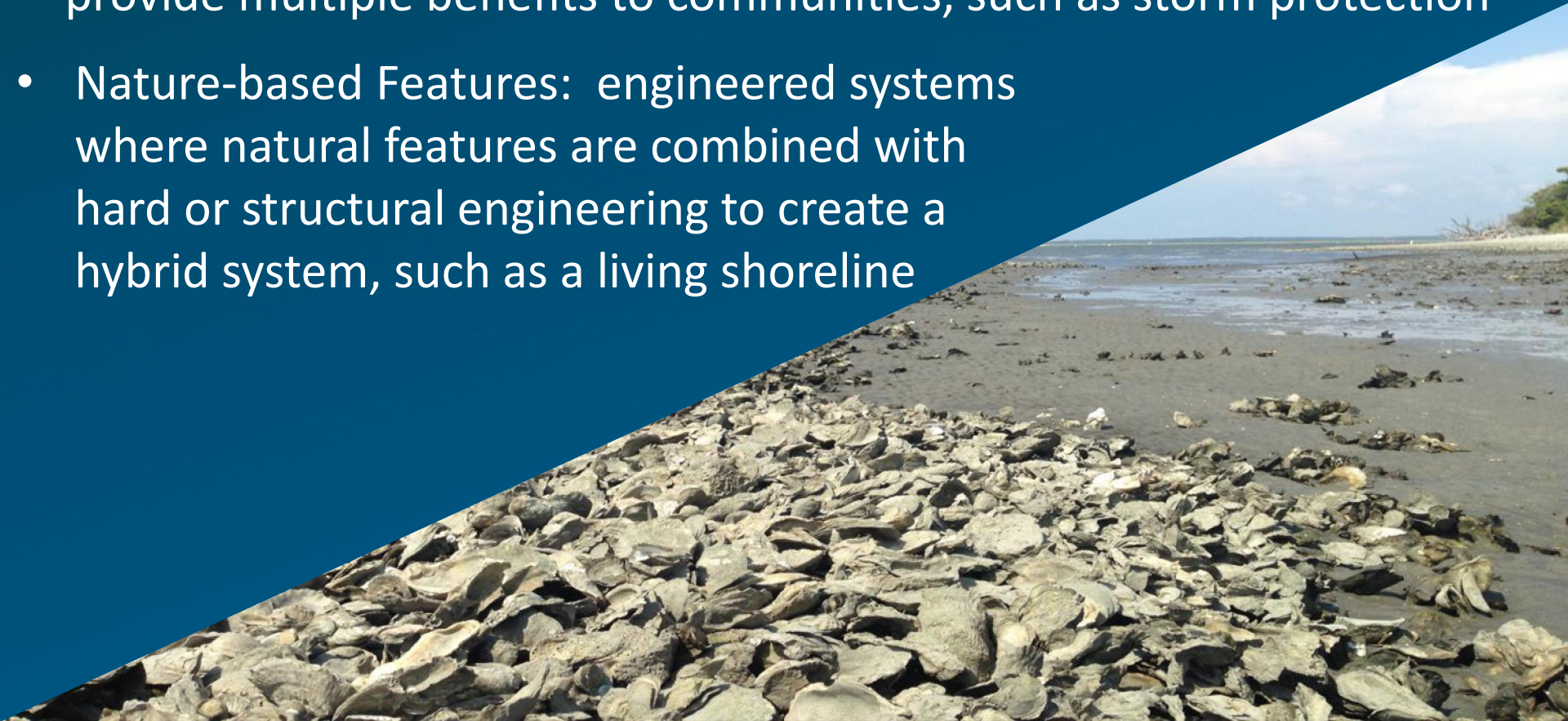
## Objective

- Evaluate and quantify the ability of natural and nature-based feature approaches to mitigate the effects of SLR and inundation (storm surge, nuisance flooding, and/or wave run-up) on coastal ecosystems and communities through integrated field research and advancement of predictive modeling applications

# FY16 Federal Funding Opportunity

## Definitions

- **Natural Features:** existing ecosystems including forests, wetlands, floodplains, dune systems, seagrasses, barrier islands and reefs that provide multiple benefits to communities, such as storm protection
- **Nature-based Features:** engineered systems where natural features are combined with hard or structural engineering to create a hybrid system, such as a living shoreline





# FY16 Federal Funding Opportunity

## Geographic Focus

- Coastal regions of the Gulf of Mexico (US only)
  - Northern coast of Florida keys to the Rio Grande River
- Coastal southern California
  - San Louis Obispo County south to the US/Mexico border



# FY16 Federal Funding Opportunity

## Research Priorities (address two or more)

- Advancement of existing SLR and inundation predictive capabilities through the dynamic coupling of hydrodynamic and biological/physical modeling platforms and the integration of field-based studies of relevant coastal processes;
- Application of advanced dynamic modeling capabilities for scenario evaluations of coastal community and ecosystem vulnerability to SLR and inundation under varying scenarios of NNBF use;
- Quantification of ecosystem services provided by NNBF approaches at enhancing community and ecosystem resilience to chronic SLR and nuisance flooding and acute inundation associated with storm surge and/or wave run up.

# FY16 Federal Funding Opportunity

## Additional Comments

- Where possible, proposals should build on and leverage existing research and prior projects;
- Focus on advancement of existing modeling platforms and/or community modeling systems used by NOAA and/or partners;
  - Dynamic model integration or downscaling;
  - Enhanced parameterization;
  - Uncertainty estimates;
  - Modules for evaluating NNBF.
- New or novel modeling approaches require significant justification and end-user demand



# FY16 Federal Funding Opportunity

## Integrating Science and Management

- Apply a collaborative science-management approach
- Clearly define management linkages and drivers
- Outline a continuous engagement process with relevant end-users
  - Could include workshops, training, and/or webinars
- Management Transition Advisory Group (MTAG) is required
  - Comprised of local stakeholders, regional partners, and end-users
- Dedicated principle investigator focused on MTAG engagement and conceptualizing project applications is strongly recommended

Ideal proposal would collaborate with NOAA to provide guidance and/or a framework for the transfer of results, capabilities and tools in additional regions.

# Questions?

David.Kidwell@noaa.gov

